

Vegetable Light Curves

Developer: John Ristvey, McREL

Audience: 8-12 Formal Education Teachers

Format: Website

Final Recommendation: Recommended, revisions next update.

The panel recommended this product as is for use by its intended audience.

Comments in the attached summary and in the individual review reports should be taken into consideration the next time the product is updated or reprinted.

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Following is the summary of the individual reviews that was distributed to the reviewers prior to the panel discussion by telecon. This information was used to guide the panel discussion; it is included here to provide a complete report of the review process.

Reviewer	Overall Rating	Recommendation
Education Reviewer	Outstanding	Recommended
Education Reviewer	Outstanding	Recommended
Education Reviewer	Very Good	Recommended, revisions next update.
Science Reviewer	Very Good	Recommended, revisions next update
Science Reviewer	Very Good	Minor Revisions

Strengths

- The product uses a hands-on activity, group exercise and provides ample opportunity to address common misconceptions with students.
- The product fits nicely with NASA's SMD Planetary Science Division content.
- The student activity sheet asks thought-provoking, activity-related questions, which will help develop student understanding of light curves and their applications.
- The teacher guide provides a list of standards that are appropriately related and supported by the activity.
- The product is well suited for 8-12th grade students (Note: one reviewer felt parts may be difficult for 8th graders). The addition of a quantitative extension allows the activity to be used by upper level (11-12) students as well.
- The addition of alternative materials (cucumber, carrot, sweet potato) and modeling (types of motors or stick) makes the activity possible in just about any classroom setting.
- The design quality is clear, easy-to-understand and follow.
- The Teacher's Guide provides ample links to online as well as print resources.

Weaknesses

- The assembly instructions could use more illustrations.
- One reviewer could not load the following sites listed in the Vignettes pdf:
 - <http://cfao.ucolick.org/> took the Reviewer to a commercial web site (Note: IGES had no trouble accessing)
 - Browser cannot find:
<http://cobalt.golden.net/~kwastro/Stellar%20Magnitude%20System.htm/>
or
<http://www.ast.cam.ac.uk/HST/press/opposite.stsci.edu/pubinfo/PR/97/27/vesta.mov>
- One reviewer felt the teacher guide was lacking sufficient introductory information about the purpose of the activity. This reviewer felt teachers unfamiliar with the subject need to read several pages to understand what this activity is going to accomplish.

Suggestions/Comments

- Specific scoring criteria are not provided, but teachers should have sufficient information between the questions and explanations provided in the Teacher's Guide to develop their own grading system.
- The addition of a specific example with numbers in the teacher guide for the "Quantitative Extensions" may be helpful to guide teachers since each student group will have different answers.
- Adding a summative assessment piece (to augment assessment questions) would be a good addition.
- Consider linking directly to the "I Can See You More Clearly Now" vignette mentioned on page 5, #5 of the Teacher's Guide.
- The design could be improved by more illustrations. For example, consider adding a photograph to the "Quantitative Extensions" section of the degree marked paper with a potato oriented on it for visual clarity (as was done in the Assembly Instructions with the motor and potato setup).
 - One reviewer suggested considering the value of the addition of a few short movies showing procedures. Specifically, the reviewer felt students might find the prompt on student activity sheet, section 4, question #4, to be difficult to understand (could use a picture, diagram, or movie to further explain).
 - Another reviewer thinks the Assembly Instructions
- Although learning technologies are not required for this activity, teachers who have graphing and modeling programs available for student use could easily integrate them.
- In "history and discovery" one reviewer was curious as to why WWII had so much of an effect but WWI didn't.
- One reviewer was surprised not to find references to the Galileo spacecraft asteroid flybys.